

## **Responses to Detailed Action by Paragraph**

### **Paragraph 3 (Priority):**

The contents of the provisional are based on the article.

### **Paragraph 4 (Information Disclosure Statement)**

An information disclosure statement is now provided.

### **Paragraph 5 (Specification)**

The referenced material is not essential subject matter. The referenced documents have now been included in the information disclosure. The reference to a website is now removed from the specification. Information about the data from the website (including samples of the data) is now included in the information disclosure. The claims spacing is now corrected. The non-applicable references to federal grants and a microfiche appendix have been removed.

### **Paragraph 6 (Drawings)**

The drawing is corrected.

### **Paragraph 7 (Claim Rejections – 35 USC 112)**

The claims are corrected to be definite and to include all essential steps. Instead of specifying the solution of a general optimization problem, the new claims specify a step of solving a linear program or integer linear program. There are standard methods and software packages available to solve these types of optimization problems.

### **Paragraph 8 (Claim rejections – 35 USC 112)**

The claims no longer contain subject matter that is not supported by the specification. The claims now enable one skilled in the art to use the invention without undue experimentation.

### **Paragraph 9 (Claim Rejections – 35 USC 101)**

The claims now indicate a concrete, useful, and tangible result. The claims now embody a transformation of the information.

### **Paragraph 10 (Claim Rejections – 35 USC 102)**

The claims now indicate an invention not anticipated by prior art. The comparisons with the stated prior art are as follows:

() “Partition-Based Uniform Error Bounds” teaches a method to compute uniform error bounds over a set of classifiers. The method would be suitable, in place of VC bounds, to compute the basis function error bounds that are inputs to the invention disclosed in this patent application. However, the method does not enable a hypothesis function error bound to be inferred from basis function error bounds, which the invention disclosed in this application enables.

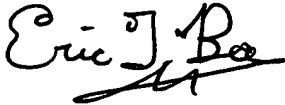
() “A New Error Bound for the Classifier Chosen by Early Stopping” teaches a method of validation by inference, but the method is limited to inferring a hypothesis function error bound from a single basis function error bound, forcing the hypothesis function error bound to be as weak or weaker than the basis function error bound from which it is inferred. The invention disclosed in this application does not suffer this weakness because it allows inference based on multiple basis function bounds.

() "Towards More Practical Average Bounds on Supervised Learning" teaches formulas for average generalization bounds, with the average taken over entire classes of classifiers and under certain assumptions about training techniques used to select the classifiers. These formulas do not apply to particular classifiers but rather to averages over entire classes. Hence, the formulas are not suitable to validate individual classifiers.

() "Computer-Implemented System and Method for Constructing a System" teaches a method to diagnose abnormal behavior in a system that has or can be modeled by well-understood components composed by having them collect inputs and feed outputs to each other. The novel aspect of the diagnosis is using backward-calculation to test whether observed outputs should have been caused by the inputs fed in, allowing the diagnosis to chain back through the model starting from the output end, traversing components until a component is found to have different behavior in the model than in practice. The invention claimed in this application is aimed at validation of a hypothesis function rather than system monitoring. Some specific differences are that the diagnosis system requires backward calculation mechanisms and metadata about components, while the invention claimed in this application does not.

#### **Conditional Request for Constructive Assistance**

If the application is not believed to be in full condition for allowance, I request further constructive assistance and suggestions from the Examiner.

A handwritten signature in black ink, appearing to read "Eric T. Bax", with a stylized flourish underneath.

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